

**We claim:**

1. A pharmaceutical composition comprising i) ketotifen or an analog thereof and ii) a chemotherapeutic drug subject to multi-drug resistance by P-gp.
- 5 2. The pharmaceutical composition according to claim 1 for use in treating cancer comprising i) ketotifen or an analog thereof and ii) a chemotherapeutic drug subject to multi-drug resistance by P-gp.
- 10 3. The pharmaceutical composition according to claim 1 for use in reducing neoplasia and/or abnormal, uncontrollable cell growth and division comprising i) ketotifen or an analog thereof and ii) a chemotherapeutic drug subject to multi-drug resistance by P-gp.
- 15 4. The pharmaceutical composition according to claim 1 for use in i) preventing or treating multi-drug resistance in an animal or ii) preventing a chemotherapeutic drug subject to multi-drug resistance by P-gp induced cardiac tissue damage in an animal, comprising an effective amount of ketotifen or an analog thereof.
- 20 5. The pharmaceutical composition according to claim 1 for use in preventing or treating multi-drug resistance in cancer cells, tumors or neoplasia comprising i) ketotifen or an analog thereof and ii) a chemotherapeutic drug subject to multi-drug resistance by P-gp.
- 25 6. The pharmaceutical composition according to any of the claims 1 to 5, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
7. The pharmaceutical composition according to any of the claims 1 to 5, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.

8. A kit comprising the agents i) ketotifen or an analog thereof and ii) a chemotherapeutic drug subject to multi-drug resistance by P-gp, and directions for administering i) and ii) to an animal.
9. The kit according to claim 8, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
10. The kit according to claim 8, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
11. The pharmaceutical composition of claims 1 to 7 or the agents of the kit of claims 8 to 10, in an oral, intravenous, intraperitoneal, subcutaneous or rectal dosage form or in combination of the foregoing dosage forms.
12. A method for treating cancer in an animal, comprising administering to the animal an effective amount of the pharmaceutical composition of claim 1 or 2 or the agents of the kit of claim 8.
13. The method of claim 12, wherein the chemotherapeutic agent subject to multi-drug resistance by P-gp comprises an anthracycline.
14. The method of claim 12, wherein the chemotherapeutic agent subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
15. The method of any one of the claims 12 to 14, wherein the cancer comprises a solid tumor or a hematological malignancy.
16. The method of any one of the claims 12 to 14, wherein the cancer comprises cells overexpressing P glycoprotein.
17. The method of any one of the claims 12 to 14, wherein the cancer comprises ovarian cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma, gastrointestinal cancer, breast cancer, prostate cancer, non small cell lung cancer, leukemia, Non-Hodgkin's lymphoma, multiple myeloma, brain cancer, neuroblastoma, or sarcomas.
18. The method of claim 17, wherein said leukemia comprises acute lymphocytic leukemia, chronic lymphocytic leukemia, acute myelogenous leukemia, or

chronic myelogenous leukemia.

19. The method of claim 17, wherein said breast cancer comprises breast carcinoma, or ductal, lobular or nipple cancer.
20. A method for i) preventing or treating multi-drug resistance in an animal or ii)  
5 preventing a chemotherapeutic drug subject to multi-drug resistance by P-gp induced cardiac tissue damage in an animal, comprising administering to the animal an effective amount of the pharmaceutical composition of claim 4.
21. The method according to claim 20, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
- 10 22. The method according to claim 20, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
23. A method for preventing or treating multi-drug resistance in cancer cells, tumors or neoplasia, comprising administering to the animal an effective amount of the pharmaceutical composition of claim 5.
- 15 24. The method according to claim 23, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
25. The method according to claim 23, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
26. A method for treating cancer in an animal, comprising  
20 administering to the animal an effective amount of ketotifen or an analog thereof, and  
administering to the animal an effective amount of a chemotherapeutic drug subject to multi-drug resistance by P-gp.
27. The method according to claim 26, wherein the chemotherapeutic drug subject  
25 to multi-drug resistance by P-gp comprises an anthracycline.
28. The method according to claim 26, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
29. The method of claim 28, wherein the ketotifen is administered prior to the doxorubicin.

30. The method of claim 29, wherein the ketotifen is administered at least 30 minutes prior to the doxorubicin.
31. The method of any one of claims 12 to 19 and 26 to 30 wherein ketotifen or analog thereof and doxorubicin or analog thereof are administered orally, intravenously, intraperitoneally, subcutaneously or rectally or by a combination of more than one of the foregoing.
32. The use of the pharmaceutical composition of claim 1 or 2 or the agents of the kit of claim 8 for treating cancer in an animal.
33. The use according to claim 32, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
34. The use according to claim 32, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
35. The use of the pharmaceutical composition of claim 4 for i) preventing or treating multi-drug resistance in an animal or ii) preventing a chemotherapeutic drug subject to multi-drug resistance by p-gp induced cardiac tissue damage in an animal.
36. The use according to claim 35, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
37. The use according to claim 35, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
38. The use of ketotifen and doxorubicin for preparation of a medicament for treatment of cancer.
39. The use of ketotifen and doxorubicin for preventing or treating multi-drug resistance in cancer cells, tumors or neoplasia.
40. The use of any one of the claims 32 to 34 and 38, wherein the cancer comprises a solid tumor or a hematological malignancy.
41. The use of any one of the claims 32 to 34 and 38, wherein the cancer cell overexpresses P glycoprotein.
42. The use of any one of the claims 32 to 34 and 38, wherein the cancer comprises

ovarian cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma, gastrointestinal cancer, breast cancer, prostate cancer, non small cell lung cancer, leukemia, Non-Hodgkin's lymphoma, multiple myeloma, brain cancer, neuroblastoma, or sarcomas.

- 5 43. The use of claim 42, wherein said leukemia comprises. acute lymphocytic leukemia, chronic lymphocytic leukemia, acute myelogenous leukemia, or chronic myelogenous leukemia
44. The use of claim 42, wherein said breast cancer comprises breast carcinoma, or ductal, lobular or nipple cancer.
- 10 45. A method of determining whether cancer should be treated with ketotifen or an analog thereof and a chemotherapeutic drug subject to multi-drug resistance by P-gp, comprising determining whether P-gp is overexpressed by the cell.
46. The method according to claim 45, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
- 15 47. The method according to claim 45, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
48. The method according to any one of the claims 45 to 47, wherein the cancer comprises a solid tumor or a hematological malignancy.
49. The method of claim 48, wherein the cancer comprises cells overexpressing P  
20 glycoprotein.
50. The method of claim 48, wherein the cancer comprises ovarian cancer, pancreatic cancer, head and neck cancer, squamous cell carcinoma, gastrointestinal cancer, breast cancer, prostate cancer, non small cell lung cancer, leukemia, Non-Hodgkin's lymphoma, multiple myeloma, brain cancer,  
25 neuroblastoma, or sarcomas.
51. The method of claim 50, where in said leukemia comprises. acute lymphocytic leukemia, chronic lymphocytic leukemia, acute myelogenous leukemia, or chronic myelogenous leukemia
52. The method of claim 50, where in said breast cancer comprises breast  
30 carcinoma, or ductal, lobular or nipple cancer.

53. The method of claims 45 to 52, further comprising treating the cancer with ketotifen or an analog thereof and a chemotherapeutic drug subject to multi-drug resistance by P-gp.
54. The method according to claim 53, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises an anthracycline.
55. The method according to claim 53, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp comprises doxorubicin or an analog thereof.
56. A method for i) preventing or treating multi-drug resistance in an animal or ii) preventing a chemotherapeutic drug subject to multi-drug resistance by P-gp induced cardiac tissue damage in an animal, comprising administering to the animal an effective amount of a compound having MDR-reversing and cardiac-protective activity.
57. The method according to claim 56, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp is an anthracycline.
58. The method according to claim 56, wherein the chemotherapeutic drug subject to multi-drug resistance by P-gp is doxorubicin or an analog thereof.